

REMARKS/ARGUMENTS

Claims 1-10, 14, 16-18, and 20-24 are currently pending in the present application. Claims 11-13, 15, and 19 were previously cancelled. Claims 1, 4, 16, 20, and 21 are amended.

In particular, claim 1 has been amended to recite “a redox initiator pair, wherein sodiumperoxodisulfate or hydrogen peroxide as an oxidizing agent and 2-hydroxy-2-sulfinatoacetic acid disodium salt as a reducing agent are the redox initiator pair.”

Claim 16 has been amended, similar to amended claim 1, to recite a redox initiator pair.

Claims 4, 20 and 21 have been amended to remove the phrase “at least one” and inserting “pair” at each instance, in accordance with the amendment to claim 1.

Support for the amendments to claims 1, 4, 16, 20, and 21 can be found at page 9, lines 13-16 of the specification, as originally filed.

No new matter has been added. Reconsideration of the application is kindly requested in view of the remarks below.

Rejection under 35 U.S.C. § 103(a)

The rejection of claims 1-10, 14, 16-18 and 20- 24 under 35 U.S.C. § 103(a) as obvious over Chaudary et al. (EP 0196162) in view of Brown et al. (US 2002/0068791) is respectfully traversed for reasons of record and the reasons discussed below, and obviated by amendment.

The references, alone or in combination, do not describe or suggest a process or method that includes the *redox initiator pair* of the presently amended claims.¹ In particular, Chaudhry et al. nor Brown et al. describe the specific redox initiator pair combination of sodiumperoxodisulfate or hydrogen peroxide as an oxidizing agent *and* 2-hydroxy-2-sulfinatoacetic acid disodium salt as a reducing agent in the presently claimed process or method.

In the Final Office Action, the Examiner alleges that there is motivation to combine the references, since “residual monomer content can be lowered because of using 2-hydroxy-2-sulfinatoacetic acid as a reducing agent in emulsion polymerization.” Page 3, lines 6-10. The Examiner also asserts that, *inter alia*, “Chaudhry et al. is open to use of any known redox

¹ Regarding a teaching (describing) or suggestion, in an obviousness inquiry, the “differences between the prior art and the claims” still must be considered. *KSR International Co. v. Teleflex Inc.*, 127 S.Ct. 1727, 1741 (2007) (“KSR”) (quoting *Graham v. John Deere Co. of Kansas City*, 383 U.S. 1, 17-18 (1966)).

initiator which may be oil or water soluble.” *Id.* at lines 13-15.

However, regarding Chaudhry et al., Applicant points out that the reference actually recites that “[polymerization] *can be effected* using known redox or thermal free radical initiators which may be oil or water soluble.” Page 3, lines 11-13 of Chaudhry et al. (Emphasis added). The reference does not describe or provide any guidance on the effect, positive or negative, for including every such initiator in every form of polymerization (including inverse polymerization). The reference only provides a specific description of the inverse polymerization in the disclosed Examples, which clearly do not include the redox initiator pair of the claimed invention. *See* Example 1, page 5 of Chaudhry et al. (describing a mixture of ammonium persulfate and sodium metabisulphite).²

Regarding Brown et al., the reference does not relate to the polymerization of the claimed invention or cure the deficiencies of the Chaudhry et al. disclosure. In particular, as previously noted, Brown et al. describe a “normal” (conventional) emulsion polymerization reaction, in which an oil phase is emulsified in water, whereas in the claimed invention, water is emulsified in an oil phase. *See* Amendment filed October 3, 2007, page 4, line 12 through page 5, line 3.

Moreover, Brown et al. includes the use a water insoluble oxidizing agent in a *redox initiator system*, which is not included in the claimed redox initiator pair.

For instance, Applicant notes that Brown et al. recite that emulsion polymerization is effected by the presence of a redox initiator system, which includes a water-soluble oxidizing agent, a water-insoluble oxidizing agent, and a sulfinic acid, or salts thereof, reducing agent. *See, e.g.*, paragraph [0005] of Brown et al. (describing the redox initiator system as contributing to improved “lower residual monomer levels”, etc.).

In particular, according to paragraph [0011], an effective redox initiator system for the emulsion polymerization is composed of a water-soluble oxidizing agent, an water-insoluble oxidizing agent, and a sulfinic acid, or salts thereof, reducing agent. Examples of the water-soluble oxidizing agents are hydrogen peroxide and ammonium or alkali metal persulfates, perborates, peracetates, peroxides, and percarbonates. *See id.* Examples of the water-insoluble

² *See W.L. Gore & Associates, Inc. v. Garlock, Inc.*, 721 F.2d 1540, 220 USPQ 303 (Fed. Cir. 1983), cert. denied, 469 U.S. 851 (1984) (indicating that prior art references must be considered in their entirety, as a whole, including any disclosures that lead away from the claims at issue).

oxidizing agents are benzoylperoxide, lauryl peroxide, t-butylperoxide, t-butylhydroperoxide, 2,2'-azobisisobutyronitrile, t-amylhydroperoxide, t-butylperoxyneodecanoate, and t-butylperoxybivalate. *See id.* However, there is no such description or use of the above-described water-insoluble oxidizing agents in the claimed invention or present specification.

As such, one of ordinary skill in the art seeking to improve a process for the preparation of polymers by an inverse emulsion polymerization reaction would not have been "prompted" by Brown et al. to use the specifically claimed redox initiator pair, since Brown et al. clearly describes a different combination, used in an oil-in-water emulsion polymerization reaction.³

Therefore, for at least the above reasons, the process according to amended claim 1, the homopolymer or copolymer according to claim 6, the method of avoiding induction times in claim 16, and the claims dependent on these claims, are novel and non-obvious in view of the combination of Chaudhry et al. and Brown et al.

In view of the above amendments and remarks, Applicant believes the pending application is in condition for allowance.

Applicant has included a fee for the RCE, and believes no additional fees are due with this amendment. However, if any additional fees are due, please charge our Deposit Account No. 03-2775, under Order No. 13156-00037-US from which the undersigned is authorized to draw.

Dated: February 19, 2008

Respectfully submitted,

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³ *Takeda Chem. Indus., v. Alphapharm Pty. Ltd.*, 492 F.3d 1350, 1356-57 (Fed. Cir. 2007)(indicating, in accordance with the reasoning in *KSR*, *supra* note 1, that there must be some identified reason that would have "prompted" a chemist to make a modification in a particular manner to establish *prima facie* obviousness).